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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/662,565 | 09/15/2003 | Christopher L. Hale | 038190/255097 | 9740 |
| 826 | 7590 | 12/13/2004 | EXAMINER | |
| ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000 | | | NGUYEN, VINCENT Q | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2858 | |

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

my

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|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/662,565 | | HALE ET AL. | |
| | Examiner | | Art Unit | |
| | Vincent Q Nguyen | | 2858 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/15/03; 5/21/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. Please submit the documents listed under Other Documents in the IDS filed 9/15/2003 (Page 2 of 2) for them to be considered by the examiner.

Specification

2. The disclosure is objected to because of the following informalities:

In the specification page 12, line 15, should "element 46" be "element 42"?

In the specification page 12, line 16, should "element 49" be "element 46"?

Appropriate correction and/or explanation is required.

For the purpose of examination, the examiner assumes that line 15, element 42 was mistyped and line 16, element 46 was mistyped.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 9-13, are rejected under 35 U.S.C. 102(b) as being anticipated by Packard et al. (6,421,214).

Regarding claims 1, 9, 10, Packard et al. discloses a system of remotely detecting an electric arc event, said system comprising (figure 1) at least one slave

Art Unit: 2858

controller (26) disposed proximate at least one load (8) and electrically connected to the at least one load via at least one conductor (70, 68, 12) (74, 72, 10), wherein the at least one slave controller (26) comprises at least one solid-state switch (42) (See also figure 3) capable of controllably altering the input current to the at least one load (8) (Through TRIP Mechanism 44); and at least one measuring element for measuring at least one parameter associated with the at least one load and the at least one solid-state switch (Column 4, lines 56-67; column 5, lines 11-22), wherein said solid-state switch (42) controllably alters the input current to the at least one load according to the at least one parameter; and at least one arc fault detector (22) electrically connected to the at least one conductor between the at least one slave controller (26) and the at least one load (8), wherein the at least one arc fault detector (22) is capable of detecting an electric arc event.

Regarding claim 2, Packard et al. discloses wherein each arc fault detector (22) is capable of notifying a respective slave controller (22) when the respective arc fault detector detects an electric arc event such that the at least one solid-state switch (42) of the respective slave controller (26) can alter the input current to the at least one load (8).

Regarding claims 3, 11, Packard et al. discloses wherein the at least one solid-state switch (42) operates in at least one mode selected from a group consisting of an on mode (Any switch is On/Off mode include the switch 42 of Packard) wherein the at least one solid-state switch (42) permits a respective load to receive the input current (The load is permitted to receive current when the switch 42 is activated to close switch

Art Unit: 2858

6), and an off mode wherein the at least one solid-state switch (42) prevents the respective load from receiving the input current (The current to the load 8 is interrupted when switch 6 is open), and wherein the at least one solid-state switch (42) is capable of operating in the on mode such that when the at least one arc fault detector (22) detects an electric arc event the at least one solid-state switch (42) is capable of being placed in the off mode (Column 4, lines 60-67).

Regarding claims 4, 5, 12, 13, Packard et al. discloses wherein each arc fault detector (22) is capable of detecting an electric arc event by detecting at least one of white noise and chaotic behavior in current through the at least one conductor to the at least one load (It is inherent that detector detects the white noise since it is a character of arc (See column 1, lines 25-31).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Packard et al. (6,432,214) in view of Simpson et al. (6,049,143).

Regarding claim 6, Packard discloses a method comprising the steps of configuring a processing element (26) that controls input current through at least one switch (42) to at least one load (8) via at least one conductor (Any conductor 10, 12, 4,

Art Unit: 2858

2, 68, 72), wherein the configuring is based upon at least one characteristic selected from a group consisting of a current rating of each load (Column 1, line 28; column 7, lines 13-20), operating each switch (42) in an on mode wherein each switch permits the input current from flowing to a respective load (8) (Switch 42 is inactive permits the input current flowing to load 8), and thereafter controlling the input current to the at least one load (8), wherein controlling the input current comprises: monitoring at least one parameter associated with each switch (current rating or white noise, column 1, lines 25-29) and respective load selected from a group consisting of the input current to the load (8); and operating each switch (42) in at least one mode selected from a group consisting of the on mode and the off mode (Any switch is operated On or Off mode including switch 42 of Packard et al.) depending upon the condition of the respective loads, wherein controlling the input current further comprises monitoring the input current for an electric arc event (Through element 22), and thereafter operating each switch in the off mode when an electric arc event is detected.

Packard et al. does not discloses a voltage rating of each load, a maximum current rating of each switch and a temperature rating of each switch and a voltage drop across the load, the input current through the switch and a temperature of the switch.

Simpson et al. discloses a system and method similar to that of Packard et al. and further discloses (Figure 23-24) a voltage rating of each load, a maximum current rating of each switch and a temperature rating of each switch and a voltage drop across the load, the input current through the switch and a temperature of the switch for the

purpose of enhancing the detecting of arcing fault to eliminate electrical shock hazard (Simpson et al.'s column 3, lines 50-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the voltage rating of each load, a maximum current rating of each switch and a temperature rating of each switch and a voltage drop across the load, the input current through the switch and a temperature of the switch as taught by Simpson et al. into the system of Packard et al. because it would have been desirable to enhance the detecting and eliminate electrical shock hazard.

Regarding claims 7, 8, it is inherent that Packard discloses the step of monitoring the input current for an electric arc event comprises monitoring the input current for at least one of white noise and chaotic behavior in the input current (Column 1, lines 25-29).

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (571) 272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

V. Nguyen

December 10, 2004

Vincent Q. Nguyen
Primary Examiner
Art Unit 2858